

WHAT IS CLAIMED IS:

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1. A rear-view mirror with a wide viewing angle and reduced single-image distortion, particularly for vehicles, wherein it comprises a monolithic plastic body which is made of transparent plastic material and in which a surface that faces objects to be detected is flat and an opposite reflecting surface is obtained with an aspheric shape which is optically generated by the rotation, about an axis which is ideally parallel to a centerline axis of the vehicle on which the mirror is to be installed, of a curve whose equation is:

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$$M = \frac{1}{1 + \frac{2E}{R}}$$

wherein M is the angular magnification of the reflected image, E is the distance of the eye of a driver from the surface of the mirror that faces objects to be detected and R is the radius of curvature of the mirror, where R varies point by point by means of an optically known equation which is extracted and obtained empirically with three parameters which depend on the design choice of M and E.

2. The mirror according to claim 1, wherein it is monolithic and said reflecting surface is fully aspheric.

20 3. The rear-view mirror according to claim 1, wherein said monolithic body made of transparent material is obtained by pressure injection-compression or gravity casting, with low-roughness surfaces which are obtained so as to be perfectly reflective by metallic deposition or by means of a film or low-thickness panel.

25 4. The rear-view mirror according to claim 1, wherein the reflecting surface is obtained by means of a coating technique or by in-mold coating or by in-mold embedding of reflective panels or films.

636 30 5. The rear-view mirror according to claim 1, wherein the reflective surface is electrically conducting and is adapted to constitute a heating element for deicing or demisting said mirror.

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6. The rear-view mirror according to claim 1, wherein the flat surface is of a water-repellent and scratch-resistant type.

7. The rear-view mirror according to claim 1, wherein said flat surface is of an electrically-conducting type.

5 8. The rear-view mirror according to claim 1, wherein said aspheric reflecting surface determines a transverse viewing angle of 85°.

9. A rear-view mirror with a wide viewing angle and reduced single-image distortion, particularly for vehicles, wherein it comprises a monolithic plastic body which is made of transparent plastic material and in which a surface that faces objects to be detected is flat and an opposite reflecting surface is obtained with an aspheric shape which is optically generated by the rotation, about an axis which is ideally perpendicular to a centerline axis of the vehicle on which the mirror is to be installed, of a curve whose equation is:

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$$M = \frac{1}{1 + \frac{2E}{R}}$$

wherein M is the angular magnification of ^Athe reflected image, E is the distance of the eye of a driver from the surface of the mirror that faces
20 objects to be detected and R is the radius of curvature of the mirror, where R varies point by point by means of an optically known equation which is extracted and obtained empirically with three parameters which depend on the design choice of M and E.

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